

REMARKS

Applicant respectfully requests reconsideration of this application. Claims 1-26 are pending. Claims 1, 8-10, 14, 15, 17, 20, 21, and 24-26 have been amended. No claims have been cancelled. Claims 27-29 have been added. Therefore, claims 1-29 are now presented for examination.

Claim Rejection under 35 U.S.C. §112

The Examiner rejected claims 1-7 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The Office Action indicates that the claims contain subject matter that was not described in the specification sufficiently. The Office Action appears to indicate that there is a contradiction regarding the transmission of a clock signal between the first device and the second device, and that the claim language for modification of the clock signal source is different than provided in the specification.

It is respectfully submitted that when claim 1 is analyzed in comparison with the specification and figures of the present application, it is clear that the claim, and particularly the portion regarding the clock signals transmitted between the devices, is consistent with the application and is supported by the application as required by law. Claim 1, as amended herein, reads as follows:

1. A method comprising:
interfacing a first device with a second device;
clocking at least a portion of the second device with a first clock
signal;
transmitting a clock signal source from the second device to the
first device;

transmitting a second clock signal from the first device to the second device, wherein the second clock signal is the clock signal source delayed by a propagation delay;
adjusting a phase of the clock signal source such that a phase of the second clock signal is substantially in alignment with a phase of the first clock signal; and
transmitting data clocked by the second clock signal from the first device to the second device.

To examine this claim, the claim will be compared with a particular embodiment of the invention, as shown in Figure 3. Claim 1 discusses a first device (such as “first device”, element 300 in Figure 3) and a second device (such as “second device”, element 305). Among other elements, claim 1 indicates that there is a clock signal source (“second clock signal source”, element 360) that is transmitted (such as through “second clock connection”, element 335) from the second device to the first device. Claim 1 further provides for transmitting a second clock signal (such as “second clock signal”, element 370) from the first device to the second device (such as through the “first clock connection”, element 330), wherein the second clock signal is the clock signal source (element 360) delayed by a propagation delay (“propagation delay”, element 365, shown as $T \pm \Delta T$).

To go on further, claim 1 provides for adjusting a phase of the clock signal source (again element 360) such that a phase of the second clock signal (element 370) is substantially in alignment with a phase of a first clock signal (such as “first clock signal”, element 355). Claim 1 also provide for transmitting data (such as through “data connection”, element 325) clocked by the second clock signal (element 370, again through “first clock connection”, element 330) from the first device to the second device.

As shown in Figure 3, the clock connection to the control unit, element 315, is utilized in the data transmission through the data connection 325.

Therefore, this illustration demonstrates that claim 1 is clearly supported by the application. Claim 1 follows an embodiment shown in Figure 3 closely. Although it is not required that the terminology of the claims precisely match the terminology used in the application in order for claims to be legally supported, in this particular case the terms match very closely. Based on this showing, it is requested that the rejection be removed.

In the examination of the claims and the figure, a typographical error was found in Figure 4 that could have caused some confusion. Element 460, the “second clock signal source”, is illustrated as a symbol containing the number “2”, while element 470, the “second clock signal”, is illustrated as a symbol containing “2S”. To be consistent with the illustrations chosen for Figure 3, it appears that these two symbols should be reversed, such that the “2S” is used for the clock signal source and “2” is used for the clock signal. A red-lined Figure 4 and a replacement sheet for Figure 4 are filed herewith to make this correction.

Claim Rejection under 35 U.S.C. §112

The Examiner rejected claims 1-13 and 16-26 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly and distinctly claim the subject matter of the invention.

Claim 1 – Transmission of Clock Signal – The Office Action again refers to lines 4-8 of claim 1, indicating that there is a confusion regarding the transmission of the clock signal. However, it is submitted that, as shown above, the source of clock signals and the transmission of such clock signals are clear and definite. In such an embodiment

describing a first device and a second device, the second device provides a clock signal source to a first device, and then the first device sends a clock signal to the second device, the clock signal being the clock signal source delayed by a propagation delay.

Claim 1 – “Being” – With regard to claim 1, the Office Action states that the phrase (or word) “being” renders the claim indefinite because “should the second clock signal read the same as clock signal source, or the second clock signal function/works as the clock signal source”. Counsel is unsure of the meaning of the objection – the claim as written in proper English and is correct. However, to assist in the examination of the application, the claim has been modified to say “wherein the second clock signal is the clock signal source with a propagation delay”.

Claim 1 – “Substantially” – With regard to claim 1, the Office Action indicates that the word “substantially” renders the claim indefinite. The Applicant respectfully disagrees. The term “substantially” has been found to be definite if sufficient guidance is found in the specification. *See, In re Mattison*, 509 F. 2d 563, 184 USPQ 484 (CCPA 1975); MPEP § 2173.05 (b) (A). In the present case, the term relates to clock alignment, “such that a phase of the second clock signal is substantially in alignment with a phase of the first clock signal”. It is submitted that meaning of such term in context is well understood by those of ordinary skill in the art. As explained in the specification, the intent is to modify the phase of a second clock signal source to align the phase of a second clock signal with the phase of a first clock signal. As further explained in the specification, the second clock signal is utilized for clocking of data. Therefore, the clear issue is that the clocks are misaligned and thus cause violations in timing for data sampling, which, as explained in the specification, may be violation set-up time and

hold-time. (Application, ¶ 0002) The timing of signals and timing violations are well understood, and the term substantially in this context is clearly understood to mean alignment in the relevant sense, which is sufficient alignment to avoid timing violation.

Claim 8 – As with claim 1, claim 8 has been modified to remove the word “being”.

Claim 7, 12, 16, 21, 24, and 25 – The rejection of these claims based on the use of the word “if” is respectfully but strongly objected to. The word “if” in a conditional phrase has a very clear meaning, and it definitely is not that an event “may happen or not happen”, as indicated in the Office Action. For a condition of the form “Action IF Condition”, the action is taken if the condition is met. The meaning of such a phrase is very well understood, and the phrase is appropriate under the provisions of 35 U.S.C. §112.

Claim 17 – As with claim 1, claim 17 has been modified to remove the word “being”.

Claim 24 – As with claim 1, claim 24 has been modified to remove the word “being”.

Claim Objection

In response to the objection, claim 14 has been corrected to refer to “a second interface connection”, rather than “a second connection”.

Claim Rejection under 35 U.S.C. §102

Liu, et al.

The Examiner rejected claims 1-3, 8, 14, 17, 18, and 24 under 35 U.S.C. 102 (b) as being anticipated by U.S Patent 6,725,390 of Liu, et al. (“Liu”).

It is submitted that Liu discusses a different type of technology does not address the elements of the claims. Among other matters, Liu does not address the elements of the claims regarding transmitting a clock signal source and adjusting a phase of the clock signal source.

The elements of claim 1 are set out above. Among the elements of the claim are “transmitting a clock signal source from the second device to the first device”, “transmitting a second clock signal from the first device to the second device, the second clock signal being the clock signal source delayed by a propagation delay”, and “adjusting a phase of the clock signal source such that a phase of the second clock signal is substantially in alignment with a phase of the first clock signal”. In brief, claim 1 provides for transmitting the clock signal source from the second device to the first device, transmitting the second clock signal from the first device to the second device, and adjusting the phase of the clock signal source.

This may be compared to the elements of Liu, which involves a different type of technology. With regard to the transmission of a clock signal source from the second device to the first device, the Office Action refers to the following provision regarding Figure 2 of Liu: “At start up and over the operation of platform 256, clock signal generator 202 transmits timing signal 256 over bus 258 to each clock recovery device coupled to bus 258.” (Liu, col. 3, lines 37-39) As is clear from this statement and from Figure 2, Liu does not provide for the transmission of a clock signal from the second device to the first device. Instead, the signal from clock signal generator 202 is provided to both the first device and the second device. Further, Liu does not provide for adjusting the phase of a clock signal source. The clock signal generator, element 202 of Figure 2,

is shown to be outside of the slave cell, element 210. Instead, Liu provides for adjusting the edges of the received clock signal. “Each clock buffer 232 uniquely shifts the edges of its own timing signal to account for timing skews that affect the travel speed of other timing signals. For example, clock buffer 232 shifts timing signal 262 to produce timing signal 266 and clock buffer 234 shifts timing signal 264 to produce timing signal 268.” (Liu, col. 3, lines 60-65) Therefore, in Figure 2 Liu provides a different type of modification, in which received timing signals are modified to account for timing skews, as opposed to adjusting the phase of a clock signal source.

Further, in Figure 3, Liu illustrates the use of a variable delay device 312, which receives a raw clock signal 262 and an offset 340 or 344 from a detector to generate a cell clock signal 318. Also, in Figure 5 Liu illustrates a variable delay device 514 that receives a raw clock signal 522 and an offset signal 558 or 560 to produce modified transmit cell clock signal 524. This process is also illustrated as element 416 of Figure 4 and element 616 of Figure 6, providing that the time delay of a variable delay function may be adjusted as a function of an offset signal. The modifications of signals using variable delays are modifications of received signals.

Therefore, Liu addresses different technology and does not provide for transmitting a clock signal source from the second device to the first device, or for adjusting the phase of the clock signal source. It is submitted that the above arguments also apply to independent claims 8, 14, 17, and 24. The terminology of claims 14, 17, and 24 has been modified to use more consistent terminology to aid in the examination of the claims. The remaining claims are dependent claims that are allowable as being dependent on the allowable base claims.

Claim Rejection under 35 U.S.C. §103

Liu, et al.

The Examiner rejected claims 15 and 20 under 35 U.S.C. 103(a) as being unpatentable over Liu.

It is submitted that Liu is not a proper reference for such rejection. Under the requirements of 35 U.S.C. §103 (c):

Section 103. Conditions for patentability; nonobvious subject matter. (c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Qualification of References as Prior Art -- The filing date of the current application is June 26, 2002, which is prior to the issuance date of Liu. Liu thus could qualify as prior art, if at all, only under 35 U.S.C. §102 (e), thereby bringing such references under the provisions of the above-quoted provisions of 35 U.S.C. §103 (c).

Common Ownership -- On behalf of the Applicant, it is hereby submitted that the subject matter of Liu and the invention of the present application were, at the time the claimed invention herein was made, jointly owned by or under a obligation of assignment to Intel Corporation.

Co-pendency - Liu was filed on June 29, 2000 and was issued on April 20, 2004. The current application was filed on June 26, 2001, and thus the applications were co-pending.

Applicability of Law to Present Application -- The present application was filed on June 26, 2001, thus after the November 29, 1999 effective date of the American Inventors Protection Act of 1999, making the provisions of 35 U.S.C. §103 (c) applicable to the present application.

Removal of Prior Art References - Removal of Rejection - Liu could qualify as prior art material only under 35 U.S.C. §102 (e). For this reason, the provisions of 35 U.S.C. §103 (c) direct that the co-owned subject matter of Liu does not preclude patentability under 35 U.S.C. §103. It is thus respectfully submitted that Liu must be removed as prior art references in the present application for the purposes of 35 U.S.C. §103, and thus that the rejection under such in the Office Action must be removed. See, MPEP § 706.02 (I) (3). It is thus requested that the claims as presented herein should be allowed.

Amendment to Specification

This application currently claims the benefit of provisional applications 60/269,229, filed February 15, 2001 and 60/289,555, filed May 8, 2001, as shown by the attached filing receipt, Attachment A, and the published application, the first page of which is attached as Attachment B. An amendment has been made to incorporate such data into the text of the specification.

Amendment to the Drawings

An amendment to Figure 4 is provided herein. As indicated above, the symbols for elements 460 and 470 are reversed to correct an error in the figure.

Conclusion

Applicant respectfully submits that the rejections have been overcome by the amendment and remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (503) 439-8778 if there remains any issue with allowance of the case.

Request for an Extension of Time

The Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

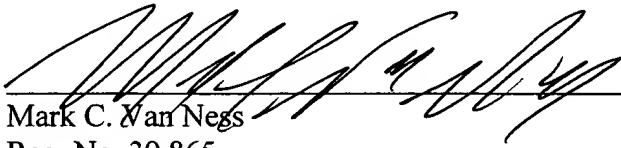
Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 1/18/05


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0893,217	06/26/2001	2151	1108	42390P11078	4	26	5

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LOS ANGELES

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Domestic Priority data as claimed by applicant

THIS APPLN CLAIMS BENEFIT OF 60/269,229 02/15/2001
AND CLAIMS BENEFIT OF 60/289,555 05/08/2001

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Foreign Applications

If Required, Foreign Filing License Granted 08/22/2001

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Title

Dynamic phase aligning interface

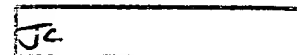
Preliminary Class

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